Message

From: Sasidharan, Abhilash [sasidharan.abhilash@epa.gov]
Sent: 10/30/2017 6:44:21 PM
To: Falke, Ernest [Falke.Ernest@epa.gov]
CC: Bateson, Thomas [Bateson.Thomas@epa.gov]; Branch, Francesca [branch.francesca@epa.gov]; Kopylev, Leonid [Kopylev.Leonid@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Pfahles-Hutchens, Andrea [Pfahles-Hutchens.Andrea@epa.gov]; Salazar, Keith [Salazar.Keith@epa.gov]; Scarano, Louis [Scarano.Louis@epa.gov]
Subject: RE: THE ASBESTOS CORN-1944 paper
Attachments: Royal Commission Report.pdf

In addition to the 1944 study, ATSDR have cited these two papers. I couldn't find the pdf of 1978 Book. The second reference is a report of the Royal Commission, Ontario, Canada. They just mention that "asbestos warts which are harmless skin growth occur when asbestos fibers penetrate the skin" [Page 104].

1.Selikoff IJ, Lee DHK, eds. 1978. Asbestos and disease. New York, NY: Academic Press, 143-187, 357-375, 377-392.
2.Dupre JS, Mustard JF, Uffen RJ, et al. 1984. Report of the Royal Commission on matters of health and safety arising from the use of asbestos in Ontario. Ontario, Canada: Ontario Ministry of the Attorney General, Publ., 73-112.

Thanks
Abhilash

From: Falke, Ernest
Sent: Monday, October 30, 2017 2:21 PM
To: Sasidharan, Abhilash <sasidharan.abhilash@epa.gov>; Bateson, Thomas <Bateson.Thomas@epa.gov>; Branch, Francesca <branch.francesca@epa.gov>; Falke, Ernest <Falke.Ernest@epa.gov>; Kopylev, Leonid <Kopylev.Leonid@epa.gov>; Lavoie, Emma <Lavoie.Emma@epa.gov>; Pfahles-Hutchens, Andrea <Pfahles-Hutchens.Andrea@epa.gov>; Salazar, Claudia <salazar.claudia@epa.gov>; Salazar, Keith <Salazar.Keith@epa.gov>; Scarano, Louis <Scarano.Louis@epa.gov>
Subject: RE: THE ASBESTOS CORN-1944 paper

I agree with Abhilash. The Alden paper Abhilash sent is the only one I have.

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From: Sasidharan, Abhilash
Sent: Monday, October 30, 2017 2:01 PM
To: Falke, Ernest <Falke.Ernest@epa.gov>
Subject: RE: THE ASBESTOS CORN-1944 paper

Hi Ernie,

Attached is the Lockey et al. article. Libby IRIS document [Page 3-2] cited this article for dermal. However, I couldn't find any information on dermal exposure or penetration in this paper.

Thanks
Abhilash

From: Falke, Ernest
Sent: Monday, October 30, 2017 1:49 PM
To: Sasidharan, Abhilash <sasidharan.abhilash@epa.gov>
Subject: RE: THE ASBESTOS CORN-1944 paper

thanks

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From: Sasidharan, Abhilash
Sent: Friday, October 27, 2017 2:17 PM
To: Falke, Ernest <Falke.Ernest@epa.gov>; Pfahles-Hutchens, Andrea <Pfahles-Hutchens.Andrea@epa.gov>; Bateson, Thomas <Bateson.Thomas@epa.gov>; Kopylev, Leonid <Kopylev.Leonid@epa.gov>; Branch, Francesca <branch.francesca@epa.gov>; Salazar, Keith <Salazar.Keith@epa.gov>
Cc: Lavoie, Emma <Lavoie.Emma@epa.gov>; Scarano, Louis <Scarano.Louis@epa.gov>
Subject: THE ASBESTOS CORN-1944 paper

From: Falke, Ernest
Sent: Friday, October 27, 2017 1:54 PM
To: Pfahles-Hutchens, Andrea; Bateson, Thomas; Kopylev, Leonid; Branch, Francesca; Sasidharan, Abhilash; Salazar, Keith
Cc: Lavoie, Emma; Scarano, Louis
Subject: Dermal asbestos notes

Below are notes I have on dermal exposure to asbestos. Looks like 2 references on dermal exposure effects. We should be able to craft something from this. I couldn't find the pdf file for Lockey on HERO.

2.1 Dermal Justification
- Systemic Effects – Animal
o ATSDR (2001) did not identify animal studies with significant "hematological, musculoskeletal, hepatic, renal, endocrine, dermal, ocular, body weight, or metabolic effects", cardiovascular, gastrointestinal, neurological, reproductive or developmental effects. There were indications of immunologic toxicity in animal studies. The most non-cancer significant effect in animals was lung fibrosis.
- Non-Cancer (human, animal)
o Dermal contact is not considered a primary source of asbestos exposure, although it may lead to secondary exposure to fibers, via ingestion or inhalation (IARC 2012).
o The only reported adverse health effect related to dermal exposure of asbestos was the formation of "warts" or "corns" on the hand due to the penetration of fibers in to the skin, which disappeared upon removal of the asbestos fibers (ATSDR 2001). If gloves are worn, some of the concern for dermal exposures may be mitigated (ATSDR 2014).
- Cancer (human, animal)
- There is no evidence of cancer health effects in humans or animals after dermal exposure to asbestos (ATSDR 2001). ATSDR (2001) did not find any dermal toxicity studies in animals.
- Humans are dermally exposed to asbestos. The only documented effect from this route is warts (Is that the right term? Reference?) at high levels of exposure (Is this statement correct?). Because the effect is relatively minor, is expressed only at high levels of exposure, and will be eliminated by controls on inhalation exposure, the dermal route of exposure will not be addressed in the EPA risk assessment.
- Dermal Toxicity
o Email from Thomas Bateson 2017-02-22
♣ I searched the LAA TR. There does not seem to be much there. Maybe Leonid can search the old general asbestos doc.
♣ Asbestos fibers can become lodged in the skin, producing a callus or corn—but generally with no serious health effects (Lockey et al., 1984 [http://hero.epa.gov/index.cfm?action=search.view&reference_id=29685]). Because few studies have examined the deposition and clearance of fibers following ingestion or dermal exposure to fibers, the focus of this section is on the main route of exposure: inhalation.
o Email from Maureen R. Gwinn 2017-02-22
♣ [redacted]
just [redacted]
ATS[redacted]
Libb[redacted]
♣ [redacted]
but good to be aware.
♣ Maureen R. Gwinn, PhD DABT ATS
o Email citation from Abhilash Sasidharan 2017-02-23
♣ Article
♣ May 1944
♣ THE ASBESTOS CORN
♣ HERBERT S. ALDEN; WILLIAM M. HOWELL
♣ Arch Derm Syphilol. 1944;49(5):312-314. doi:10.1001/archderm.1944.01510110010003
o Email from Leonid Kopylev 2017-02-23

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

♣ Thanks for sharing this article, which is historically fascinated (although only first page was available). It described what evidently was bare-handed application of amosite in shipbuilding. I would not think neither such exposures nor bare-handed work with raw asbestos is something that is current US practice, so would not use this paper as evidence of dermal effects at any exposure to new asbestos.

o Email from Emma Lavoie 2017-02-23

♣ You or RAD colleagues should be able to access the Lockey reference in HERO.

- Below is what I found on HERO – Did they get the pdf of the article?

HERO ID
29685

Reference Type
Journal Article

Title
Pulmonary changes after exposure to vermiculite contaminated with fibrous tremolite

Author(s)
Lockey, JE; Brooks, SM; Jarabek, AM; Khoury, PR; Mckay, RT; Carson, A; Morrison, JA; Wiot, JF; Spitz, HB

Year
1984

Is Peer Reviewed?
Yes

Journal
American Review of Respiratory Disease
ISSN: 0003-0805

Report Number
NIOSH/00144962

Volume
129

Issue
6

Page Numbers
952-958

Language
English

PMID
6329050

DOI
10.1164/arrd.1984.129.6.952

Web of Science Id
WOS:A1984SU49400013

Abstract
Workers exposed to vermiculite contaminated with fibrous tremolite were surveyed for the presence of respiratory symptoms by questionnaire, and for pneumoconiosis by chest radiograph. Pulmonary function was measured by spirometry and single-breath carbon monoxide diffusing capacity (DLCOsb). Fiber exposure indexes, expressed as fiber/ml-yr, were derived for each worker from available industrial hygiene data and work histories. The estimated cumulative exposure for the work force ranged from 0.01 to 39

fiber/ml-yr. Discriminant analysis demonstrated significant correlates with shortness of breath and pleuritic chest pain to cumulative fiber exposure. The radiographic changes were limited to pleural changes and involved 4.4% of the population. Parametric and discriminant analysis demonstrated a significant correlation with radiographic changes and cumulative fiber exposure. There were no correlations between spirometry or DLCOsb and fiber exposure. Exposure to vermiculite contaminated with fibrous tremolite can cause pleural changes in occupationally exposed workers. This is supported by the previously identified 12 cases of benign pleural effusions in this working population and the association of pleural radiographic changes and pleuritic chest symptoms with cumulative fiber exposure. The lack of significant parenchymal radiographic, spirometric, and DLCOsb changes most likely reflects the low cumulative fiber exposure.

Mesh Terms
Adult

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